UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,366	07/24/2003	Kent K. Leung	CISCP091C1	2451

22434	7590	10/13/2006

BEYER WEAVER & THOMAS, LLP
P.O. BOX 70250
OAKLAND, CA 94612-0250

EXAMINER
SHAH, CHIRAG G

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/627,366	LEUNG, KENT K.
	Examiner	Art Unit	
	Chirag G. Shah	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _24 July 2006_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-57_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-57_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 1, 19, 22 and 25 recite limitation "adapted to." Under MPEP 2106, page 2100-8,

"language that suggests or makes optional but does not require steps to be performed or does not

limit a claim to a particular structure does not limit the scope of a claim or claim limitation."

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

3.   Claims 44 and 46 rejected under 35 U.S.C. 101 because Claims 44 and 46, line 1 states,

"A computer-readable medium storing thereon computer-readable instructions for

registering...," which must be changed to "A computer-readable medium storing thereon

computer-readable instructions <u>executed by a computer</u> for registering...",

In order for the claimed subject matter to comply with the subject matter eligibility

requirement of 35 U.S.C. 101, the above mentioned must be changed. According to Annex IV of

the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter

Eligibility, Nonfunctional descriptive material does not constitute a statutory process, machine,

manufacture or composition of matter and should be rejected under 35 U.S.C. 101.

Nonfunctional descriptive material may be claimed in combination with other functional

descriptive multi-media material on a computer-readable medium to provide the necessary

functional and structural interrelationship to satisfy the requirements of 35 U.S.C. 101.

Double Patenting

4.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5.   Claims 26, 30, 32-43, 44-57 rejected on the ground of nonstatutory obviousness-type

double patenting as being unpatentable over claims 1, 16, 18-28, 29-31 of U.S. Patent No.

6,195,705. Although the conflicting claims are not identical, they are not patentably distinct

from each other because

Claims 26 merely broaden the scope of claim 1 of U.S. Patent No. 6,195,705 by

eliminating the term, "ascertaining from the registration request packet whether the router

includes a Home Agent associated with the mobile node." It is held that the omission of an

element and its function is an obvious expedient if the remaining elements perform the same

function as before. In re Karlson, 136 USPQ 184 (CCPA). Also note Ex Parte Raine, 168 USPQ

375 (bd. App. 1969); omission of a reference element whose function is not needed would be

obvious to one skilled in the art. Therefore, claim 26 of the instant application is rejected so as

to prevent the unjustified or improper timewise extension of the "right to exclude" granted by the

patent.

Claims 30 merely broaden the scope of claim 16 of U.S. Patent No. 6,195,705 by

eliminating the term, "ascertaining from the registration request packet whether the router

includes a Home Agent associated with the mobile node." It is held that the omission of an

element and its function is an obvious expedient if the remaining elements perform the same

function as before. In re Karlson, 136 USPQ 184 (CCPA). Also note Ex Parte Raine, 168 USPQ

375 (bd. App. 1969); omission of a reference element whose function is not needed would be

obvious to one skilled in the art. Therefore, claim 26 of the instant application is rejected so as

to prevent the unjustified or improper timewise extension of the "right to exclude" granted by the

patent.

Claims 32-43 are substantially identical to the scope of claims 32-43 of U.S. Patent No.

6,195,705.

Claims 44-57 are substantially identical to the scope of claim 29-31 of U.S. Patent No.

6,195,705.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1-57 rejected under 35 U.S.C. 103(a) as being unpatentable over La Porta (U.S.

Patent No. 6,434,134) in view of Ahmed et al. (U.S. Patent No. 6,160,804)

Regarding claims 1, 9, 19, 22, and 25 La Porta teaches in figure 2 and respective portions

of the specification of a router supporting mobile IP where the root router utilizes a processor

and memory together. La Porta also teaches in columns 4-6 of route optimization extension that

provides a means for the correspondent node to cache a binding associated with the mobile

device and then send packets directly to the care-of address indicated in that binding, thereby

bypassing the mobile device's home agent. La Porta fails to explicitly teach of disclosing a

binding table, which includes an entry associated with at least one mobile node that has

registered with a Home Agent of the router and the entry identifies a care-of address associated

with the at least one mobile node and a visitor table, which includes the list of addresses of all

mobile nodes being services by a Foreign Agent of the router and mobile nodes including the at

least one mobile node that has registered with the Home Agent of the router, within a router.

Ahmed discloses in figs. 1 and 4 and col. 13, lines 17-65, which includes a table 1 stored

in the HLR (Home Location Registers) containing the location of a mobile that is currently

attached to and gets when the point of attachment changes the mobile's HLR gets updated, this

table serves at the binding table having the home location register. Ahmed further discloses in

col. 14, lines 48-56 that each node (router) also maintains a VLR table that records information

on mobiles that are within its coverage area and have registered with it. Thus the HLR, the VLR,

and the Home Directory table may be stored and updated in memory 12 of the network node.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the

invention to modify the teaching of La Porta to include the features of a VLR and HLR tables

within a network node as taught by Ahmed. One is motivated as such in order to ensure a

mobility management technique that yields an efficient, scaleable, and flexible communications

system capable of handling various multimedia applications in a highly dynamic networking

environment.

Regarding claims 26, 30-32, 44-46, 50, 54 and 10, 26, La Porta teaches in figure 2 and

respective portions of the specification of a router supporting mobile IP where the root router

utilizes a processor and memory together. La Porta also teaches in columns 4-6 of route

optimization extension that provides a means for the correspondent node to cache a binding

associated with the mobile device and then send packets directly to the care-of address indicated

in that binding, thereby bypassing the mobile device's home agent. La Porta fails to explicitly

disclose of the method, an apparatus and a computer readable-medium registering a mobile node

visiting a Foreign Agent with a Home Agent. Ahmed discloses

receiving a registration request packet from the mobile node [network node 104 of figure

4, periodically receives registration entries in HLR, see col. 13, lines 15-30 and fig. 4];

determining from the registration request packet whether the router includes the Foreign

Agent the mobile node is visiting [see col. 15, lines 27 to col. 16, lines 17, where the direct

network node checks the VLR to see if there is a match to the host name the mobile node is

visiting]

determining from the registration request packet whether the router includes the Home

Agent with which the mobile node is registering [see col. 15, lines 27 to col. 16, lines 17, where

the initiating mobile sends an HLR SNLA lookup message to the direct network node to query

the HLR SNLA lookup message to the direct network node to query the HLR location of the

correspondent mobile]; and

if it is determined from the registration request packet that the router includes the Foreign

Agent the mobile node is visiting and the Home Agent with which the mobile node is registering,

registering the mobile node with the Home Agent of the router [see figs 5A and 5B and col. 15,

lines 27 to col. 16, lines 17, the initiating mobile sends HLR look up message to direct network

node; network node checks to determine if a match exists; if no match exists, the direct network

node directs HLR of correspondent mobile in the home directory table and the HLR initiates

search procedure to locate and register the correspondent mobile].

Regarding claims 2, 11 and 24, La Porta teaches in columns 6 and 7 that when a mobile

device in transit is handed off from one base station within the assigned home domain to a base

station in a foreign domain, packets are tunneled from the home agent to a care-of address

assigned to the mobile device within the foreign domain as claim. Routers are then updated

within the foreign domain to reflect the changes in registration as claim.

Regarding claims 3, 6, 12, 13, 16, 38 and 41-43, La Porta teaches wherein the Home

Agent is associated with a first interface of the router and the Foreign Agent is associated with a

second interface of the router; wherein the first interface is the second interface; wherein the first

interface is different from the second interface. [La Porta teaches in figures 12-18, column 17-33

and respective portions of the specification that three path handoff schemes are used and the

routing table updates accordingly. In other words, in routers processing a new-to-old handoff

path setup message, routers which receive message update their routing table entries

corresponding to the originating mobile device's IP address to point to the interface of the router

over which the handoff path setup message arrived. Therefore, the interface field in the routing

table identifies a physical interface on the router as claim. La Porta teaches in figure 22 and

respective portion of that specification that the tunneling optimization utilizes a foreign agent co-

located with the mobile device, therefore, a mobile device's care-of address is used as the mobile

device's foreign agent address. Thus, the home agent may interchange the IP header destination

address from the mobile device address to the co-located care-of address (foreign agent address).

When the packet reaches the mobile device, the co-located foreign agent substitutes the mobile

device's IP address for the foreign agent address, thus restoring the packet header with the

originally included fields].

Regarding claims 4, 7, 8, 14, 17, 18, 20, 23, 27, 28, 34, 36, 39, 40, 47, 48, 51, 52, 55, and

56, Ahmed suggests wherein registering the mobile node is performed without creating a tunnel

interface to reach the mobile node and Home Agent [Ahmed disclose in col. 13, lines 5 to col.

14, lines 55, of Home and Visitor location registration, each mobile station is assigned a HLR,

which includes mobile's host name, unique ID, SNLA, time of entry and expiration time;

furthermore, each network node also maintains a VLR that records information on mobiles that

are within its coverage area and have registered with it, thus clearly suggesting that registration is

performed without a tunnel interface] as claim.

Regarding claims 5, 15, and 21, Ahmed discloses in fig. 4 and col. 13, lines 17-50

wherein the next hop field in the routing table specifies a home address associated with one of

the mobile nodes as claims.

Regarding claims 29, 49, and 53, Ahmed discloses further comprising: forwarding the

registration request packet to the Home Agent if it is ascertained from the registration request

packet that the router does not include the Home Agent, wherein the Home Agent is external to

the router [see figs 5A and 5B and col. 15, lines 27 to col. 16, lines 17, the initiating mobile

sends HLR look up message to direct network node; network node checks to determine if a

match exists; if no match exists, the direct network node directs HLR of correspondent mobile in

the home directory table and the HLR initiates search procedure to locate the correspondent

mobile]. .

Regarding claims 33, 35 and 37, Ahmed discloses registering the mobile nodes includes

updating the binding table of the Home Agent with a care-of-address and visitor tables of the

Foreign Agent to include address of the mobile node and an associated physical interface on the

router without creating or specifying a tunnel interface to reach the Home Agent [col. 13, lines

25 to col. 14, lines 56, where it clearly discloses that when the mobile's point of attachment

changes, then the mobile's HLR table get updated and each network node also maintains a VLR

table that records information on mobiles that are within its coverage area and have registered

withit; each table includes an associated physical interface of the router by providing the mobile

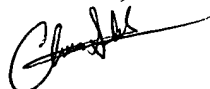SNLA interface address].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7682. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

cgs
October 4, 2006

Chirag Shah
Primary Examiner, 2616